

**WAUKESHA COUNTY
DEPARTMENT OF PARKS AND LAND USE**

Division of Environmental Health
1320 Pewaukee Road, Room 260 C Waukesha, WI 53188
(262) 896-8300 1-800-567-2366

FLUORIDE: Families with children are sometimes advised by their doctor or dentist to have their drinking water checked for fluoride to determine if a fluoride supplement should be added to the diet of their children. You are advised to show your results to your doctor or dentist for further interpretation.

CHLORIDE: Consumption of water having chloride levels in excess of 250 mg/l is not considered hazardous to health but may be objectionable to an appreciable number of people.

IRON: Iron levels in excess of 0.3 mg/l are not considered hazardous to health but may be objectionable to an appreciable number of people due to taste or staining.

HARDNESS: Water is normally considered "hard" when it contains in excess of 100 mg/l (ppm) of hardness, and is considered "soft" when it contains less than 50 mg/l (ppm) hardness. Mg/l or ppm of hardness can be converted to grains of hardness by dividing by 17.1. (One grain is equal to 17.1 ppm.)

CHLORINE: The presence of chlorine in a water sample that is being tested for coliform bacteria will give inaccurate bacteriological results. If chlorine is present, the water system should be flushed to remove any chlorine residual. A week to 10 days should elapse before the water is sampled again.

NITRATE: Nitrate levels in excess of 10 mg/l exceed the maximum level for safe drinking water and present a potential health problem for infants 6 months of age or younger. If the reported level is in excess of 10 mg/l, and if there is an infant under 6 months of age in your home who is fed water or formula prepared with water, it is advisable to obtain water from a bacteriologically safe source having a nitrate-nitrogen level of less than 10 mg/l. Remember the following important points:

— **Do not** give high nitrate water to infants under 6 months of age either directly or in formula.

— Boiling high nitrate water only increases the nitrate level due to evaporation of the water.

— **Seek immediate medical attention** if the skin of the infant takes on a "blue" tone or tint. This cyanosed condition is known as methemoglobinemia and is caused by nitrates reacting with hemoglobin of the blood, thereby reducing the capability of the blood to carry oxygen to the body tissues.

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Warning: Do not attempt to chlorinate your private well if the well pump or piping is connected to the well cap or if you have a flowing well or pressurized well head. A licensed pump installer or well driller should be contacted for pump installations of this type or in situations where you are unsure of the pump type. On occasion, during the process of chlorinating your well, damage to the well pump may occur. There is also a risk of electrical shock. If you have questions concerning the chlorination process or want to have it professionally done, it is recommended that you contact a licensed well driller or pump installer.

RECOMMENDED CHLORINATION PROCEDURE FOR WATER SUPPLY SYSTEMS

Chlorination is, in most instances, an effective means of removing contamination from a properly situated well of approved construction. Following correction of any well construction deficiencies, the water system may be chlorinated by the individual or, if he wishes, by a well driller or pump installer equipped to do the job. Directions for this process, using commercial laundry bleach, are given below as a step procedure. Each step in the procedure must be completed before moving to the next and each must be done to insure the process need not be repeated unnecessarily.

STEP 1: One gallon of 5% commercial laundry bleach (Hilex, Clorox, B.K. Solution, etc.) or 10 ounces of dry calcium hypochlorite (65-70% available chlorine) should be used for each 100 gallons of water contained in the well. Mix the bleach thoroughly with an amount of water equal to the amount of water contained in the well. The table below will help you in determining the volume of water contained in your well.

Casing Diameter in Inches	4	5	6	7	8
Gallons of Water Per Foot of Water Depth	0.7	1.0	1.5	2.0	2.6

STEP 2: Remove the well cap or seal from the top of the well casing. Submersible well pumps may be suspended from some types of well caps and well seals. It is recommended that a well driller or pump installer be contacted to chlorinate the well for these types of installations. If the well cap or well seal can be easily removed, pour the chlorine solution into the well. Care must be taken to prevent the chlorine solution from splashing and coming in contact with skin or eyes. There is also a hazard in mixing dry chlorine-base products because a violent reaction could occur in the confined space of a well.

STEP 3: Attach a hose to the faucet on the discharge side of the pump and wash down the walls of the casing with the chlorinated water from the well for about 30 minutes. This flushing not only provides for disinfection of the walls of the casing but also permits circulation of the chlorinated water to all the pump and well parts.

STEP 4: Manufactures of some water softeners recommend that the softener be bypassed during the chlorination procedure. Please consult your water softener manual for instructions. Open all faucets in the water system long enough to permit the filling of all the distribution piping with the chlorinated water and then close them. When the odor of chlorine can be detected at the faucet, it can be assumed that the piping to that point has been filled with chlorinated water.

STEP 5: Allow the bleach to act in the well and distribution for a period of 24 hours, then attach a hose to an outside tap and run the chlorinated water from the well to a point removed from the house, usually the roadside ditch. Allow the pump to purge the well for several hours or until the odor of chlorine can no longer be detected. Following this, the distribution piping should be flushed free of chlorine by opening all faucets.

Following chlorination, a week to 10 days should elapse before the system is again sampled. If bacteriological analysis of this sample reveals it to be free of contamination, a second sample should be obtained at a later date (preferably one to two months after the first sample date) to insure that the source of pollution has been eliminated and the system remains free of contamination.

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